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JOURNAL

OF THE

New York Entomological Society.

Vol. VI.

JUNE, 1898.

No. 2.

STUDIES IN THE PTINIDÆ, CIOIDÆ AND SPHIN- DIDÆ OF AMERICA.

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The term "America," in the above title, is employed to designate that portion of the American continent embraced within the boundaries of the United States. There should be no more ambiguity in designating the United States of America as America simply, than in calling the United States of Brazil, or the United States of Colombia by the last word of their respective titles. It may perhaps be considered egotistical for us to appropriate to ourselves the name characterizing the continents of the western hemisphere, but as we have no other title to distinguish us among the numerous aggregates of united states which compose these continents, there is no reasonable motive for avoiding the apparent conceit.

PTINIDÆ.

PTILININI.

The insects of this tribe form an appropriate introduction to the Bostrichinæ, for they are evidently a connective bond with the Anobiini. Our species have not been studied for many years. We have two genera as follows:—

Antennæ strongly flabellate in the male, serrate in the female. **Ptilinus**
Antennæ slender and feebly serrate in the male, shorter and somewhat stouter but
rather more strongly serrate in the female. **Euceratocerus**

The eyes are rather larger and more convex in *Euceratocerus* than in *Ptilinus*, but are much smaller in the female than in the male. Selecting the apparent males by this character I have been unable to observe any pectination of the male antenna in *pleuralis*, though it may exist in *horni*, of which I have not seen the male.

Ptilinus Geoff.

The long slender pubescent appendages of the male antenna are not an extreme development of the usual serriform structure, but project from the base of the joints, the joints themselves being slender and sometimes cylindrical. In the female, however, the joints are prolonged outwardly and in an obliquely anterior direction, forming a truly and quite strongly serriform antenna. The males differ from the females not only in the structure of the antennæ but in the much denser sculpture of the entire body, and frequently to a very great degree in the form of the prothorax. In the following table of the species included within my cabinet, all the discriminating characters refer to the female, except in the case of *flavipennis*, of which the only known example is a male:—

- Color uniform throughout or very nearly, the elytra not paler..... 2
 Color blackish, the elytra flavate..... 8
 2—Prothorax sinuate at the sides subapically, the apex more or less prominent in a rounded or feebly sinuate lobe..... 3
 Prothorax arcuately oblique subapically, the apex angulate and slightly prominent 6
 Prothorax broadly and evenly arcuate at apex, feebly sinuate in the middle..... 7
 3—Elytra distinctly punctured only toward the base, the punctures nearly obsolete toward tip; thoracic lobe feebly and evenly crenulate. California. **basalis** Lec.
 Elytra distinctly punctured throughout..... 4
 4—Thoracic lobe narrowly rounded and with a few closely approximate serrules at tip. Pennsylvania to Indiana..... **ruficornis** Say
 Thoracic lobe broadly rounded, with a feeble cuspiform emargination and minutely and evenly serrulate throughout..... 5
 5—Scutellum elongate, finely and densely rugose; epipleuræ gradually wider at base.
Female.—Body rather stout, cylindrical, dark piceo-castaneous in color throughout, the legs scarcely, the antennæ much, paler; lustre rather dull, the pubescence very short and dense on the elytra. Head convex, minutely and densely granulate, the transverse frontal impression distinct. Prothorax distinctly wider than long, widest at about the middle, narrowed slightly to the base, rapidly and just visibly sinuate to the apical lobe; surface minutely and densely granulose toward base, more coarsely, sparsely and irregularly so toward apex, the median line finely impressed. Elytra three-fourths longer than wide, equal in width to the prothorax, minutely and densely subgranulose in texture, with the punctures rather strong, sparse and distinct, feebler toward tip, where they are more distinctly intermingled with small granules and the ground lustre is more shining. Length 4.0 mm.; width 1.5 mm. Nebraska..... **lobatus**, sp. nov.
 Scutellum quadrate, coarsely rugose; epipleuræ rapidly wider at base. *Male*.—Cylindrical, opaque, black, the legs scarcely paler, the antennæ pale rufous, the rami infuscate; pubescence extremely minute and not very conspicuous. Head convex, dull, minutely subgranulose, the eyes convex, separated on the front by about four times their own width. Prothorax about a third wider than long, broadly, evenly arcuate at base, gradually narrowed and arcuate at the sides from

the broadly rounded basal angles to the apex, the latter much narrower than the base and evenly and more strongly arcuate; surface densely granulato-rugose throughout, the median line very fine and subobsolete. Elytra three-fifths longer than wide, rather wider than the prothorax and much more than twice as long, very densely granulato-rugose and opaque, the punctures distinct throughout, with about two impressed series along the lateral margin. *Female*.—A little larger and paler in color than the male, with more shining elytra, upon which there are more distinct traces on each of three or four feeble ridges. Prothorax larger, fully as wide as the elytra, rounded at the sides, widest just behind the middle, the surface more sparsely and decidedly granose toward tip. Elytra scarcely three-fifths longer than wide, twice as long as the prothorax. Length 3.0–3.5 mm.; width 1.1–1.2 mm. Indiana. **pruinusosus**, sp. nov.

- 6—Elytral punctures only distinct near the base, where they are fine. *Female*.—Evenly cylindrical, piceous, the legs and antennæ paler; pubescence very short, even, extremely dense, yellowish in color and conspicuous on the elytra; lustre rather shining. Head evenly convex, minutely granulato-rugose, the epistomal impression small and rather feeble. Prothorax not quite as long as wide, the sides parallel and feebly arcuate; apex broadly and evenly ogival; surface minutely granulose, becoming nearly smooth at the sides toward base, the granules coarse and pronounced toward apex except laterally. Scutellum quadrate, feebly convex, dull. Elytra fully three-fourths longer than wide, about twice as long as the prothorax, smooth and alutaceous, without trace of impressed lines at any part. Abdomen rather convex, the second segment somewhat longer than the first. Length 2.8–4.0 mm.; width 0.9–1.4 mm. California (Sta. Cruz Mts.).
acuminatus, sp. nov.

- 7—Elytra with fine, even and somewhat impressed striae in both sexes. *Male*.—Cylindrical, blackish, the elytra generally a little paler; legs and antennæ pale, the flabellum infuscate; surface dull, the humeral callus more shining. Head short, inserted to the eyes which are well developed and strongly convex; surface but feebly convex, densely scabrous and opaque; antennal joints very short, the rami very long and slender. Prothorax a little shorter than wide, parallel and straight at the sides, broadly and evenly rounded in apical third or fourth, with a minute sinus at the middle; surface coarsely, densely and roughly granulato-scabrous throughout the width, becoming much more finely so and smoother toward base. Scutellum moderate, subquadrate. Elytra three-fourths longer than wide, a little more than twice as long as the prothorax and rather wider, densely dull and finely granulato-rugose, the second and fifth intervals uniting and rather convex near the declivity, the ninth also becoming broader and slightly convex behind. *Female*.—Rather shining and dark rufo-testaceous throughout, the prothorax similar in form but rather shorter and fully as wide as the elytra, with the rugulosities more distinct and isolated, nearly smooth toward base, the head more elongate, narrower and with the eyes small and distant from the prothorax; elytra rather flattened on the posterior declivity, with the intervals slightly uneven. Length 3.0–4.2 mm.; width 0.9–1.4 mm. California (Sta. Cruz Mts.) **ramicornis**, sp. nov.

- 8—Elytra with rather strong punctures unevenly arranged throughout. *Male*.—Cylindrical, blackish and opaque, the elytra flavate and less dull; legs paler, the

antennæ pale flavate; pubescence short, fine and moderately distinct. Head rather short, inserted nearly to the eyes, which are well developed and very convex; surface moderately convex, dull and subscabrous; antennæ moderate in length, the rami unusually short and gradually thickened from their bases, the ramus of the fourth joint three times as long as the joint. Prothorax distinctly shorter than wide, the outline broadly parabolic from the base continuously around the apex, the sides becoming almost parallel near the base, which is broadly arcuate, finely margined toward the middle; surface densely granulato-scabrous, larger individual granules but slightly evident toward tip. Scutellum longer than wide, dull, obtuse at tip as usual. Elytra three-fourths longer than wide, twice as long at the prothorax and scarcely wider, the punctures equally visible throughout, rather large but sparse and with but the vaguest suggestion of lineal arrangement. Length 2.4 mm.; width 0.8 mm. California (Los Angeles Co.) **flavipennis**, sp. nov.

The female in this genus generally has a short acute transverse ridge near the apex of the last ventral segment, but in *ramicornis* the fifth segment is simple in that sex, having merely a very small and shallow impression at the apex. The male usually has the fifth ventral simple or slightly more convex at the apex, where it is broadly and evenly rounded.

Acuminatus is represented before me by seven females varying greatly in size, and the male is apparently rare; on the other hand *ramicornis* is represented by nine specimens, only two of which are females. *Thoracicus* Rand., is not known to me at present and is therefore omitted from the table.

Euceratocerus Lec.

The fifth ventral segment is generally impressed in the female of *Euceratocerus* and is rather shorter than in the male, where it is simple. The species are all elongate and subcylindrical, though rather less convex than in *Ptilinus*, the head minutely and densely granulose, the prothorax less minutely and very clearly and evenly granulate throughout the disk, but rather more densely at the summit of the more convex median parts near the base. The elytra have very fine, scarcely impressed striæ, which extend nearly to the apex in *horni*, and that species is well distinguished from any of the California representatives by the two basal impressions of the pronotum. The species are very much more closely allied among themselves than those of *Ptilinus*, and the male appears to be very rare in comparison with the female. The four species in my cabinet may be identified as follows from the female:—

Basal joint of the hind tarsi very much shorter than the entire remainder, the second joint relatively more elongate; pronotum impressed at each side near the basal margin; elytra more elongate; eyes separated by rather less than three times their own width. Texas..... **horni** Lec.

- Basal joint but slightly shorter than the entire remainder, the second joint relatively much shorter; pronotum not impressed sublaterally at base. 2
- 2—Pleural sulcus below the humeri deep and strongly marked; elytra twice as long as wide; eyes separated by evidently more than three times their own width. Body rather stout, the elytra subdilated near the tip, blackish-piceous above, the legs and antennæ dark rufous or rufo-piceous; surface feebly shining, the pubescence extremely short, pale, dense and conspicuous on the elytra. Head short, inserted to the eyes, dull, the epistomal impression well marked. Prothorax three-fifths wider than long, rounded at apex, the sides thence strongly diverging and feebly sinuate, becoming parallel and broadly rounded in basal half; basal angles rounded. Elytra twice as long as wide, more than three times as long as the prothorax and fully as wide, a little wider at apical third; humeral angles rounded. Length 3.7-4.5 mm.; width 1.3-1.7 mm. California (Sta. Cruz Mts.) **pleuralis**, sp. nov.
- Pleural sulcus narrow and feeble. 3
- 3—Elytra fully twice as long as wide; eyes small, separated by fully four times their own width. Body very slender, nearly as in *pleuralis* but narrower, the elytra not distinctly wider behind and fully three and one-half times as long as the prothorax, the latter nearly similar in outline but still more transverse, the sides becoming parallel in less than basal half, with the median line similarly finely impressed anteriorly. Length 2.9 mm.; width 1.0 mm. California (locality not indicated) **macris**, sp. nov.
- Elytra much shorter, three-fourths longer than wide; eyes more convex and better developed, separated by three times their own width. Body suboblong, moderately convex, dull, blackish, almost similar throughout to *pleuralis* but shorter, the prothorax relatively rather smaller and the elytra much shorter, not distinctly dilated subapically, and with the minute subgranuliform rugulosity still finer and the pubescence a little denser, the fine striæ distinct to the summit of the convex declivity. The hind tarsi are longer than in *pleuralis*. Length 3.4 mm.; width 1.25 mm. California (locality not indicated) .. **saginitus**, sp. nov.

The descriptions are derived throughout from the female, the only male accessible to me being one of the four examples of *pleuralis*. This male is very much smaller and narrower than the female, with the eyes better developed and separated by slightly more than twice their own width; the prothorax is more transverse and almost semicircular in outline from the base around the apex, near which it is perhaps more correctly broadly parabolic; the last ventral segment is simple, rounded to apex and not quite as long as the two preceding combined; the antennæ do not differ essentially in structure from those of the female, but are rather more slender.

BOSTRICHINI.

The genera of Bostrichini have not been considered in their mutual relationships for twenty years, when a review of them was published by Dr. Horn. I find it necessary to increase the genera recognized by

that author by five, the species hitherto placed in *Sinoxylon* being quite heterogeneous and in no single instance truly a member of that genus. *Sinoxylon dinoderoides*, *Amphicerus fortis* and *Dinoderus brevis* are also types of distinct genera. The genus proposed for the last named species is called *Patea* in the table. The genera known thus far may be thus distinguished:—

- Tarsi long, with the last joint relatively shorter, the second joint usually elongate; claws and tibial spurs stouter, grooved beneath, the edges of the groove minutely crenulate. 2
- Tarsi short, the four basal joints subequal among themselves and together nearly equal to the fifth; claws smaller and more slender, not at all crenulate within. . 9
- 2—Funicular joints of the antennæ very short and closely united, together never longer than the first joint of the club, the latter long, loose and strongly compressed 3
- Funicular joints more elongate and less closely united, together generally much longer than the first joint of the club 6
- 3—Antennal club 3-jointed. 4
- Antennal club 4-jointed. **Tetrapriocera**
- 4—Antennæ 10-jointed, the elytral declivity with well-marked spines or tubercles. . 5
- Antennæ 9-jointed, the elytral declivity without spines or tubercles at the sides, or with very rudimentary tuberculiform irregularities, excavated near the suture, the latter with a spiniform elevation; antennal club moderate in development, its joints decreasing in width and only very feebly serriform **Xylopertha**
- 5—Antennal club moderately developed, its first and second joints nearly similar in form; elytral declivity sexspinose. **Xylobiops**
- Antennal club greatly elongated, its first and second joints dissimilar in form, the former more or less outwardly produced at apex; elytral declivity quadrituberculose. **Dendrobiella**
- 6—Joints of the antennal club strongly compressed and deeply bistrate from the apical margin; front simply tumid; hind angles of the prothorax rounded.
- Amphicerus**
- Joints of the antennal club strongly compressed but not striate, the two sensitive patches near the apices of the joints rounded and feebly marked; front lamellarly prominent behind the clypeus; hind angles of the prothorax not rounded. . **Apatides**
- Joints of the antennal club but feebly compressed and generally quite convex, the first two more or less transverse, with the two sensitive patches rounded and subapical; front not transversely prominent. 7
- 7—Tibiæ dentate externally; claws abruptly bent at base, not distinctly crenulate; size very large **Dinapate**
- Tibiæ not dentate; claws evenly arcuate; size moderate or small. 8
- 8—Front margined at the sides; eyes well developed **Bostrichus**
- Front not margined, convex; eyes small **Micrapate**
- 9—Antennæ with the two basal joints relatively smaller, the funicle well developed; club rather short, 3-jointed.
- Antennæ 10-jointed; body elongate, the head exserted. **Dinoderus**
- Antennæ 11-jointed; body short and stout; head deeply inserted. **Patea**

In *Tetrapriocera* and *Patea* the antennæ are 11-jointed. In all the others they are 10-jointed, except in *Xylopertha* and in one species of *Bostrichus*, where they have but nine joints. *Tetrapriocera longicornis* (= *schwarzi* Horn) is the only known species of that genus. *Xylopertha* is confined, as might be expected, to the subsiberian fauna of the Pacific coast, where it is represented by *bidentata*, *declivis* and *suturalis*, hitherto placed in *Sinoxylon*, which genus has the two basal joints of the antennal club short and transverse. *Xylobiops* is proposed for the *Sinoxylon basillare*, *texanum*, *sextuberculatum* and *floridanum* of the present lists. *Dinapate wrighti*, the type and only known species of the genus, is the largest bostrichid known; it will probably soon become extinct by reason of the destruction of its food-plant for commercial purposes.

Dendrobiella, gen. nov.

This genus inhabits the warmer parts of the North American continent and also the West Indies; the species known to me may be identified by the following characters:—

Elytral punctures distinct throughout the disk, except at the sides, where they are obsolete, finer toward base, coarser posteriorly to the brink of the declivity, the latter smooth and impunctured as usual throughout the genus.

Larger species, 5.5–6 mm. in length, blackish in color. **sericans** Lec.

Smaller species, 4 mm. in length, rufo-piceous in color. . . . **quadriscopiosa** Lec.

Elytral punctures rather fine and sparse but distinct toward base, becoming wholly obsolete toward the declivity. *Male*.—Head well developed, the surface flattened, polished, nude and finely, sparsely punctulate, bituberculose at the base of the vertex; eyes moderate, very prominent; antennæ pale, longer than the width of the head, the first seven joints together scarcely longer than the first joint of the club, the tenth joint long and narrow. Prothorax wider than long, slightly narrowed anteriorly, broadly truncate at apex, the sides becoming parallel behind the middle; apical asperities moderately coarse and obtuse at the sides; disk polished, finely, subimbricately punctulate toward the middle in more than basal half. Elytra shining, the pubescence rather long, fine, decumbent, fulvous and conspicuous; apical truncature flat and shining, the tubercles moderate, the lower more obtuse. *Female*.—Smaller than the male but nearly similar, except that the head is smaller, more convex, less shining, feebly convex, punctured, pubescent and devoid of tubercles. Length 4.3–5.0 mm.; width 1.75–2.1 mm. Texas (Brownsville). **pubescens**, sp. nov.

Elytral punctures wholly obsolete, being feebly traceable only very near the base.

Male.—Head moderate, flattened, becoming concave behind the frontal margin, minutely, sparingly puberulent, slightly shining, finely and rather closely punctulate throughout; two small tubercles of the vertex on a transverse line through the posterior limits of the eyes; antennæ but little longer than the width of the head, nearly as in *pubescens*. Prothorax much wider than long, feebly narrowed in

apical half, very broadly truncate at apex, the apico-lateral serrules acute, about three in number; sculpture nearly as in *pubescens*, except that the disk is finely, sparsely punctulate toward base, without trace of imbricate sculpture. Elytra smooth, conspicuously pubescent; apical tubercles small and rather feeble, Length 5.0 mm.; width 2.0 mm. Island of Jamaica.....**sublævis**, sp. nov.

It is probable that *pubescens* is the species identified as *sericans* by Gorham in the "Biologia."

Amphicerus Lec.

This is a rather large and important genus among our bostrichids, not at all closely allied to *Apate* as is said to be the case by Mr. Gorham in the "Biologia," the two differing radically in the form of the antennal club among other characters. The species known to me are as follows:—

- Flytra deeply margined at apex.....2
 Elytra not strongly margined at apex, smaller species, brown or testaceous in color, with the sculpture toward the base of the pronotum less broadly granulate and more nearly strigose.....7
 2—Elytra 4-tuberculate at the summit of the apical declivity, less distinctly so in the female; body generally black throughout.....3
 Elytra bituberculate at the summit of the apical declivity, rudimentarily so in the female; color dark brown, the elytra less coarsely punctate.....6
 3—Pubescence of the elytra wanting or not distinguishable under low power.....4
 Pubescence of the elytra conspicuous but decumbent.....5
 4—Elytra of the female more elongate, distinctly more than twice as long as wide, with coarse and close-set punctures. Southern Texas to Honduras.

punctipennis Lec.

Elytra of the female distinctly shorter, about twice as long as wide, with smaller and sparser punctures. *Female*.—Body cylindrical, black, polished and glabrous. Head two-thirds as wide as the prothorax, with the eyes rather large, very convex and prominent; vertex transversely tumid and pubescent; sculpture coarsely granulato-rugose; antennæ as long as the width of the head, dark rufopiceous. Prothorax as long as wide, parallel and broadly arcuate at the sides, narrowed and serrate at the sides anteriorly, the apex sinuato-truncate, with the apical teeth small; surface coarsely asperato-granose anteriorly, smooth with flattened contiguous tubercles posteriorly. Elytra more than twice as long as the prothorax and a little wider, the punctures coarser and closer toward the sides and strongly and coarsely confluent on the apical declivity; tubercles rudimentary. Abdomen with whitish pubescence, minutely and densely punctulate, with coarse punctures interspersed. Length 12.0 mm; width 4.0 mm. Texas (Galveston).....**maritimus**, sp. nov.

- 5—*Female*.—Body very slender, cylindrical, shining, black with a feeble piceous tinge. Head three-fourths as wide as the prothorax, the eyes very convex and prominent; vertex moderately tumid, the surface granulato rugose with a smooth

median spot posteriorly; antennæ rather stout, not quite as long as the width of the head. Prothorax obviously shorter than wide, narrowed somewhat from very near the base, more rapidly and arcuately and with moderate serrules anteriorly, the apical sinuation narrow with the teeth small; surface coarsely asperato-tuberculate anteriorly, smoother in basal two thirds, the sculpture becoming coarsely subimbricate in the middle toward base, with the surface shining and the median line finely impressed. Elytra much more than twice as long as wide, nearly three times as long as the prothorax and just visibly wider, the punctures coarse and close-set, subserial in arrangement, coarse, contiguous and subconfluent on the declivity, the tubercles feeble, especially the inner. Abdomen finely punctulate, pubescent, the scattered larger punctures rather small. Legs quite slender. Length 9.0 mm.; width 2.5 mm. Kansas, Iowa and North Carolina. **gracilis**, sp. nov.

- 6—Pubescence distinct, decumbent. Sutural series rather impressed, the suture elevated on the declivity. Head rather small, the eyes moderate in size. Elytral punctures not serial in arrangement, but with traces of three fine raised lines. Indiana and Kansas **bicaudatus** Say.

- 7—Prothorax emarginate at apex, fully as long as wide and with the usual terminal teeth of the lateral series. *Male*.—Rather stout, cylindrical, shining, dark testaceous-brown in color; antennæ pale; surface virtually glabrous. Head moderate, nearly two-thirds as wide as the prothorax, broadly, almost evenly convex, with a large median impunctate area; transverse impression behind the clypeus deep and distinct; eyes small and but moderately prominent; antennæ fully as long as the width of the head. Prothorax fully as long as wide, the sides broadly arcuate, becoming parallel only very near the base, converging anteriorly where the serrules are prominent and close-set in less than apical half; apex narrowly sinuate. surface tuberculose anteriorly, becoming smooth and polished in basal half and almost sculptureless toward the sides but sparsely imbricato-strigose toward the middle. Elytra short, one-half longer than wide, equal in width to the prothorax, strongly but not very closely, confusedly punctate, more closely but scarcely coalescently behind, the declivity very steep, more convex at each side above but not tuberculate, the suture elevated. Abdomen finely, strongly and densely punctulate, the scattered coarser punctures not visible, the pubescence even, decumbent and rather dense; last segment shorter than any of the preceding. Hind tarsi very much longer than the tibiae. Length 6.7 mm; width 2.2 mm. Texas (El Paso) **grandicollis**, sp. nov.

Prothorax truncate at tip, with the angles obtuse and rounded, without trace of processes. 8

- 8—Larger species, the prothorax much wider than long and trapezoidal in form; *Female*.—Rather slender, cylindrical, shining, subglabrous, dark rufo-testaceous in color. Head well developed, nearly three-fourths as wide as the prothorax, the surface granose throughout, tumid posteriorly, the epistomal suture just beyond the middle of the length and impressed toward the middle, the epistoma large; eyes very large, convex and prominent; antennæ obviously shorter than the width of the head, with the club relatively very long, the five joints of the funicle together barely equal in length to its first joint. Prothorax much wider than long, the sides parallel and feebly arcuate nearly to the middle, then

strongly convergent to the truncate apex, the latter not visible from above but narrow and feebly sinuate; declivity coarsely asperate above, smoother near the apex, subserrate laterally, the teeth not extending to the apex; basal half rather dull in lustre and with short strigiform lines not densely placed. Elytra about twice as long as wide, between two and three times as long as the prothorax and rather wider, rather coarsely, deeply and irregularly but uniformly and quite densely punctate, very densely and perforately so behind, the declivity moderately steep, more convex at each side but not tuberculate, the suture elevated. Abdomen closely punctulate, the pubescence moderately abundant. Tarsi very long. Length 6.5-7.0 mm.; width 2.0-2.2 mm. Texas (El Paso).

brevicollis, sp. nov.

Small species, 4.5-5.5 mm. in length, the prothorax as broad as long. Body elongate, cylindrical, sparsely clothed with moderately long semi-erect hair; elytra coarsely and seriatly punctate; under surface sparsely punctate. California (Fort Yuma) **teres** Horn

Grandicollis is described from what appears to be the male, but the eyes are very small when compared with those of *brevicollis*, of which the four homogeneous examples before me seem to be females; both of these species and probably *teres* also, which I have not seen, have the funicle of the antennæ much shorter than in the others; in *grandicollis* the five joints together are however quite distinctly longer than the first joint of the club; in *brevicollis* they are barely as long as the first joint but do not have the closely crowded structure observed in *Sinoxylon* and *Tetrapriocera*. In *brevicollis* there are a few erect hairs observable near the sides of the elytra especially behind, but otherwise the surface is glabrous and the punctures are only feebly subseriate in arrangement.

Apatides, gen. nov.

This genus is amply distinct from *Amphicerus* in the characters of the table. We have the following three species:—

Inner margin of the epipleuræ continuous and obliquely ascending at base to the humeral angles in the female; basal angles of the prothorax acute and prominent; head and abdomen finely punctate, the former slightly tumid or subcarinate along the middle toward the frontal margin. Lower California and California (Yuma) **fortis** Lec.

Inner margin of the epipleuræ discontinuous at base in the female, basal angles of the prothorax not at all rounded but at the same time not distinctly prominent, the surface less impressed before the angles. **2**

2—Vertex gradually ascending to the prominent frontal margin, finely and sparsely punctate, the abdomen minutely punctulate throughout; thoracic processes separated by rather more than a third of the total width. *Male*.—Head three-fifths as wide as the prothorax, the latter nearly as long as wide, with the

apical processes long and obliquely convergent; surface with the usual isolated tubercles toward base. Elytra twice as long as wide, just visibly wider than the prothorax, the apical declivity flattened, becoming alutaceous in lustre and almost impunctate toward the suture, which is elevated. *Female*.—Similar to the male but larger, with the thoracic processes short and parallel, the elytra rather more than twice as long as wide and more distinctly wider than the prothorax, the apical declivity convex and coarsely perforato-punctate throughout, the suture moderately elevated. Length 13.0–15.5 mm.; width 4.3–5.1 mm.

Texas (El Paso).....**robustus**, sp. nov.

Vertex more tumid and convex, less finely and quite strongly punctured throughout; abdomen strongly though sparsely punctured toward base; thoracic processes more approximate, separated by but little more than a fourth of the total width.

Female.—Head moderate in size, the eyes very convex and prominent as usual. Prothorax not quite as long as wide, nearly as in *robustus* but less devoid of sculpture toward the basal angles. Elytra not at all more than twice as long as wide, the apical declivity rather more convex at each side than in *robustus*, steeper and a little less coarsely punctured. Abdomen polished as usual, the punctures becoming finer and denser toward apex. Length 12.5 mm.; width 4.3 mm. Arizona (Locality not specified—Levette Cabinet.)

puncticeps, sp. nov.

The male of *fortis* has the apical processes more convergent and longer than the female, but there seems to be no modification of the elytral declivity near the suture. Individuals vary much in size as usual in the Bostrichinæ.

Bostrichus Geoff.

The genus *Bostrichus*, as represented in America, differs remarkably from *Amphicerus* in the structure of the antennal club, the joints being short, subglobose, and with the sensitive spaces small and circular; it also differs in having the basal angles of the prothorax acute and prominent, but in that respect resembles *Apatides*, from which it differs in turn in the structure of the antennal club and frontal parts of the head. The following table comprises all the species known to me at present:—

- | | |
|---|---|
| Prothorax narrowly and deeply sinuate at apex, with the limiting processes prominent and generally unciform; elytra each with two ridges more or less distinct or interrupted..... | 2 |
| Prothorax sinuato-truncate at apex, with the limiting angles acute and somewhat prominent; vestiture hair-like, decumbent and unevenly distributed; elytra without trace of ridges; species smaller and more slender..... | 5 |
| 2—Hind tarsi fully as long as the tibiæ; unciform processes of the prothorax more prominent. Atlantic regions..... | 3 |
| Hind tarsi shorter than the tibiæ; unciform processes shorter, not differing in form from the lateral serrules.... | 4 |

- 3—Vestiture of the elytra squamiform; inner ridge strong and continuous to the apical declivity **bicornis** Web.
 Vestiture more hair-like and still more unevenly disposed in clusters; inner ridge feeble and much interrupted, the outer almost obsolete **armiger** Lec.
 4—Elytral vestiture long and hair-like, very sparse and almost evenly disposed; ridges fine, feeble and subobsolete **californicus** Horn
 5—Antennæ 10-jointed as usual **truncatcollis** Lec.
 Antennæ 9-jointed. Evenly cylindrical, black, the antennæ and tarsi paler; vestiture coarsely hair-like, fulvous in color, dense and conspicuous, somewhat uneven on the elytra but much less nucleated than in *truncatcollis*. Head moderate, opaque, pubescent, the eyes well developed; antennæ as long as the width of the head, the funicle 4-jointed. Prothorax nearly as long as wide, roughly tuberculose, pubescent, the basal angles acutely prominent; median line somewhat depressed. Elytra slightly wider than the prothorax, two and one-half times as long as wide, coarsely, densely, unevenly punctured and finely tuberculose. Legs rather short and slender, the hind tarsi longer than the tibiæ. Length 6.4 mm.; width 1.8 mm. New Jersey (Woodbury).

angustus, sp. nov.

In the males the elytral apices are minutely spinulose throughout, but there is very little sexual difference otherwise, except that the male is generally smaller and with the elytra less elongate. It will probably prove necessary to generically separate the American species of *Bostrichus* from the European forms, when the family is monographed as a whole.

Micrapate, gen. nov.

This genus is founded upon the *Sinoxylon dinoderoides* of Horn, and its allied species, and I have ventured to include also the *S. simplex* of that author, although the size is so much greater that renewed observation would possibly disclose some divergencies of a generic nature. I should have been disposed to refer the specimens described above under the name *Amphicerus brevicollis* to *S. simplex*, were it not for the fact that the basal parts of the pronotum are said to be "densely punctate," which language it would be impossible to apply to *brevicollis*, where the sculpture of that part consists of short, isolated and longitudinal raised lines, as in the *Amphicerus teres* of Horn. It is a peculiarity of *Micrapate* that the basal parts of the pronotum are truly and simply punctate, and not in any way asperate, granose or tuberculose. Our species are as follows:—

- Pronotum less densely or rather sparsely punctured toward base; size much smaller, never materially exceeding 4 mm. in length 2
 Pronotum densely punctate toward base 3
 2—Surface "feebly shining;" suture moderately and evenly elevated on the apical declivity. Arizona and Texas (Brownsville) **dinoderoides** Horn

Surface strongly shining; sutural elevation on the declivity strong, its summit for a short distance at the middle of the declivity, still more elevated, dilated and canaliculate. *Female*.—Similar to *dinoderoides* but smaller, the epistomal suture more deeply impressed and more remote from the apical margin. Prothorax nearly as long as wide, similar to *dinoderoides* but still more sparsely punctate toward base. Elytra rather coarsely, strongly punctured and very densely so, the punctures rather sparser toward the suture except on the declivity, but not as sparse as in *dinoderoides*, the surface unevenly rugose by anteriorly oblique light. Under surface finely and densely punctulate, confluent so on the sterna. Length 3.4 mm.; width 1.15 mm. District of Columbia**cristicauda**, sp. nov.

3—Size larger, 6.5 mm. in length. Body piceous, the elytra brownish; head opaque, tuberculate, the maxillary palpi with the last two joints equal; prothorax wider than long; elytra not wider than the prothorax, very coarsely and closely punctate, the punctures of the declivity coarser and denser, the sutural region slightly elevated, especially in the apical declivity. Body beneath moderately densely punctate, sparsely pubescent. Texas (southwestern)**simplex** Horn

I have here regarded the specimens recently taken by Mr. Wickham in the extreme southern part of Texas, near Brownsville, as representing the true *dinoderoides*, but actual comparison will be necessary to decide, as these examples are certainly strongly shining.

Dinoderus Steph.

The rather numerous species of this genus may be outlined in the table which follows. *Punctatus* and *truncatus* are the only discordant elements after eliminating *brevis*, and they may have to be separated at some future time.

Apex of the elytra convex, the suture only very rarely somewhat prominent, the apical margin not concave or prominently margined; pubescence erect. 2

Apex of the elytra more abruptly truncate, concave and prominently margined at tip; pubescence decumbent. 13

2—Pronotum with granuliform and separated tubercles toward base. 3

Pronotum with flattened and generally subcontiguous tubercles toward base; side margins almost devoid of serrulation except at apex; body more cylindro-convex 8

3—Elytra polished or strongly shining. 4

Elytra opaque; color dark brown or blackish-piceous. 5

4—Elytra with very close-set perforate punctures, larger than the width of the intervals, the latter tuberculose; color dark brown throughout. Michigan, Canada and Europe.**substriatus** Payk.

Elytra with less coarse and impressed punctures, not larger than the width of the intervals, the latter less elevated and more feebly but distinctly tuberculose; color black or blackish. Head moderate, exerted, with a polished constriction at base as usual; surface subopaque, granulose, the epistomal suture distinct; apex sinuate; eyes small, convex; antennæ stout, dark rufous, not as long as the

width of the head. Prothorax not quite as long as wide, the apex broadly arcuate, the sides becoming parallel and feebly arcuate near the base, serrate throughout, rather strongly at the rounded basal angles and still more coarsely around the apex; base broadly lobed; surface with small, strong and isolated granules throughout, intermingled anteriorly with some larger sparse asperities. Scutellum small. Elytra not quite twice as long as wide, more than twice as long as the prothorax and slightly wider; surface with series of moderately coarse punctures, confused near the suture and smaller and less seriate on the flanks; intervals asperate; apex evenly convex, with the punctures confused and asperate. Abdomen shining, sparsely punctulato-rugose and finely, sparsely pubescent. Length 4.0-4.8 mm; width 1.3-1.6 mm. California (Calaveras Co.), Colorado and Idaho (Cœur d'Alène)..... **pacificus**, sp. nov.

Elytra with less coarse and more impressed punctures, nearly as in *pacificus* and not larger than the width of the intervals, the latter perfectly even, polished and devoid of tubercles or asperities throughout. Body deep black, the erect hairs of the elytra rather short. Head dull, sparsely pubescent, the epistoma broadly sinuate. Prothorax not quite as long as wide, arcuately swollen toward base, broadly rounded and asperato-tuberculose at apex; disk granose toward base. Elytra slightly wider than the prothorax, rather short, four-fifths longer than wide, the punctures seriate in arrangement, densely confused near the suture, more broadly toward base, small and irregular in arrangement toward the side margins, the apical declivity evenly convex and not at all granulose though more closely and unevenly punctate. Abdomen shining, sparsely punctulate. Length 2.7-3.7 mm.; width 0.8-1.2 mm. Wyoming (Laramie) and Arizona.

sobrinus, sp. nov.

5—Elytral granules strong and well defined, arranged in even single series along the intervals..... 6

Elytral granules subobsolete except on the declivity, the punctured series contiguous, with the intervening ridges narrow and alternately slightly stronger..... 7

6—Elytra roughly and densely punctate on the declivity, the tuberculose intervals equal throughout, finely and confusedly on the flanks. Head short and transverse, granose, the basal constriction exposed as usual; eyes small; antennæ short, the club paler; epistomal suture subobsolete. Prothorax slightly shorter than wide, nearly as in *pacificus*. Elytra not quite twice as long as wide, rather wider than the prothorax, the lustre dull, the sculpture coarse and rough, the punctures of the series large, deep and approximate but circular and well defined, except at the sides. Abdomen minutely, sparsely punctulate, feebly pubescent. Length 4.0 mm.; width 1.4 mm. New Mexico (Fort Wingate)..... **asperulus**, sp. nov.

Elytra finely, evenly and strongly granose on the declivity; intervals separating the punctured series equal in elevation; punctures of the series coalescent and not well defined. Head short and transverse, finely granose, the labrum declivous, the eyes and antennæ moderate. Prothorax not quite as long as wide, broadly rounded and strongly asperate anteriorly, the sides feebly diverging to the rounded and asperate basal angles; disk with the granules equal, strong and isolated toward base. Elytra but little wider than the prothorax, scarcely twice as long as wide, densely sculptured in even series, except near the suture and

- more broadly on the flanks, the elevations polished. Length 5.2 mm.; width 1.6 mm. Arizona (Seligman) **amplus**, sp. nov.
- Elytra rather sparsely and strongly granose on the declivity; intervals separating the punctured series alternating in prominence; punctures of the series subtransverse, subcoalescent and not well defined. North Carolina . . . **porcatus** Lec.
- 7—Punctures of the elytral series confluent, opaque and not well defined. Head transverse, opaque and granulose; eyes small; antennæ short, dark rufous, the club not paler. Prothorax nearly as in *pacificus*, the basal angles less rounded. Elytra about twice as long as wide, slightly wider than the prothorax and much more than twice as long; sculpture very dense, the surface densely opaque; erect hairs moderate in length, stiff and fulvous. Abdomen rather dull, finely, sparsely punctulate. Length 3.0–4.0 mm.; width 0.9–1.2 mm. Virginia (Norfolk) **opacus**, sp. nov.
- 8—Elytral punctures confused in arrangement, at least toward the sides and suture. . 9
- Elytral punctures forming perfectly even series throughout the width, the intervals even 12
- 9—Apical declivity of the elytra granulose, the punctures more close-set throughout. 10
- Apical declivity simply punctate 11
- 10—Elytral punctures distinctly asperate throughout. Body and legs blackish, the antennæ rufo-piceous; surface moderately shining. Head short, not very densely granose. Prothorax not quite as long as wide, the sides feebly convergent from near the broadly rounded basal angles, merging gradually into the broadly rounded and moderately serrulate apex; surface sparsely, rather strongly asperate anteriorly, more closely granulate toward base, the granules flattened, less dense laterally. Elytra about two-thirds longer than wide, twice as long as the prothorax and scarcely wider; punctures not very coarse, serial in arrangement, the intervals flat and even; apex evenly convex, strongly grano-tuberculose. Abdomen shining, sparsely punctulate. Length 3.7 mm.; width 1.2 mm. New Jersey **hispidulus**, sp. nov.
- Elytral punctures circular, not asperate on the disk and toward the suture, feebly granuliferous on the convex declivity; elytra polished, the intervals flat; serial arrangement of the punctures only observable along the middle of each elytron. South Carolina **densus** Lec.
- Elytral punctures abnormal, not rounded but somewhat dilated at their posterior limits, serial in arrangement and well separated, more confused near the suture and broadly toward the sides, not granulose except posteriorly and on the declivity. Body evenly cylindrical, shining, dark piceous, the elytral vestiture sparse, stiff and erect. Head nearly smooth, constricted at base as usual. Prothorax nearly as long as wide, oval, asperulate anteriorly, the basal angles rounded; disk with the flattened and nearly contiguous tubercles toward base small. Elytra perfectly cylindrical, barely twice as long as the prothorax and perceptibly wider, not quite twice as long as wide, polished. Length 2.4 mm.; width 0.7 mm. Pennsylvania **parvulus**, sp. nov.
- 11—Dark rufo-piceous, the elytra blackish, highly polished with rather small and simple punctures, which are only feebly subserial in arrangement, becoming very small and feebler on the flanks and simple on the declivity. Indiana and South Carolina **cribratus** Lec.

- 12—Body small, narrow, subglabrous, highly polished and pale rufo-testaceous throughout; apical margin of the prothorax rather crenulate than serrulate. Iowa (Keokuk). Cosmopolitan and introduced..... **pusillus** Fabr.
- 13—Antennæ with the second joint nearly as slender as the third, the funicle bristling with long coarse hairs anteriorly; ridge of the apical declivity short; head strongly, transversely tumid behind the epistoma. New York, Indiana and South Carolina..... **punctatus** Say
- Antennæ with the second joint stout, the funicle not more setose in front; declivity more abrupt and flat, with the marginal ridge long. California.

truncatus Horn

I have not been able to compare *substriatus** of the table with European examples, and the identification is taken from the books; it is referred to the genus *Stephanopachys* by Heyden, Reitter and Weise, who separate also *pusillus* under the generic name *Rhizopertha* (*Rhyzopertha*). The differences seem to be scarcely generic in value. *Truncatus* of Horn, I have not seen.

CIOIDÆ.

The Cioidæ are intimately related to the Bostrichinæ, as shown by general organization, and particularly by the two small rounded sensitive areas near the apices of the joints of the antennal club, greatly developed in the genus *Plesiocis*; but, at the same time, they are closely allied also to some groups at present assigned to the Clavicornia, such as the Cryptophagidæ and Mycetophagidæ. In fact, the assemblages which are at present collectively known as the Clavicornia, are so heterogeneous among themselves as to indicate that they do not form a natural division of the Coleoptera at all, but are in many cases the extreme developments of various types of Serricornia or Adephaga, and the Heteromera belong near them in immediate succession. *Berginus* has a purely serricorn habitus, and yet has been placed with the Mycetophagidæ. I believe that the Cryptophagidæ and Mycetophagidæ should not be widely separated from Cioidæ and Sphindidæ, and I am in favor of removing them from the so-called Clavicornia and placing them in the Serricornia near Cioidæ. This would be far more natural than to remove the Cioidæ to the Clavicornia. The Cucujidæ, consisting of the subfamilies Passandrinæ, Colydiinæ, Monotominæ, Rhyssodinae, Lyctinæ, Silvaninæ, Brontinæ, Cucujinæ and Hemipeplinæ should also be removed from the Clavicornia and follow Cioidæ, Cryptophagidæ, etc., in the Serricornia. The Hemipeplinæ form a natural transition to the Heteromera.

* *Dinoderus substriatus* is said by Mannerheim (Bull. Mosc., 1853, p. 233), to inhabit also the Kerai Peninsula, in Alaska.

The Cioidæ consist of two subfamilies, Cioinæ and Rhipidandrinæ, distinguished by clavate and compactly serrate antennæ respectively. The American genera of Cioinæ are as follows:—

- Antennæ 10-jointed 2
 Antennæ 9-jointed..... 7
 Antennæ 8-jointed; body glabrous..... 8
 2—Prosternum well developed before the coxæ; lateral edges of the prothorax acute to the apex 3
 Prosternum very short and transversely excavated before the coxæ; lateral edges of the prothorax becoming subobsolete at the apex..... 6
 3—The prosternum simple or nearly so..... 4
 The prosternum tumid or carinate along the middle 5
 4—Body setose or pubescent the vestiture erect and bristling, the anterior tibiæ finely produced and dentiform externally at apex, sometimes simple **Cis**
 Body glabrous, the anterior tibiæ wholly unarmed at apex; elytral suture margined toward tip; body elongate, the head rather less deflexed than usual, the head and prothorax simple in the male, the latter with a deep rounded setigerous fovea at the centre of the first ventral segment..... **Orthocis**
 5—Body glabrous or with very short decumbent pubescence or inclined setæ.
Xestocis
 6—Body very short, oblong-oval in form, with stiff erect pubescence as in *Cis*.
Brachycis
 7—Body stout, convex, coarsely cribrate and setose; anterior tibiæ strongly, obliquely produced and acute externally at apex..... **Plesiocis**
 Body narrow, cylindrical, feebly sculptured and glabrous, the anterior tibiæ thickened and externally rounded and spinulose at apex..... **Ennearthron**
 8—Anterior tibiæ swollen, rounded and spinulose externally at apex as in *Ennearthron*; head and prothorax strongly modified in the male..... **Ceracis**
 Anterior tibiæ narrowly triangular, the external edge straight throughout and minutely spinulose; head and prothorax not modified in the male. . **Octotemnus**

The term glabrous, as used above, signifies the absence of distinct pubescence; with high power each puncture can be seen to bear a very small hair. Many of Mellié's species are still unknown to me, and the localities of some of them may be open to doubt; a few may possibly be synonyms, as, for example, *atripennis*, which may have been founded upon a damaged specimen of *fuscipes*. It is possible that the *Cis pumicatus* of Mellié may prove to be an *Octotemnus*. *Ceracis* is very closely allied to *Ennearthron*, and was indeed considered to be more properly a subgenus by Mellié. The figure of *C. sallei*, on plate 4 of the monograph, seems to have been taken from a specimen of *Ennearthron melliéi*.*

* I am indebted for several very interesting species of Cioidæ to my friend, P. Jerome Schmitt, of Westmoreland county, Pa., and Mr. Wickham has also contributed a number of interesting species in Bostrichinæ, Cioidæ and Sphindidæ.

Cis Latr.

Only those species represented before me are included in the following table:—

- Elytra with shallow, variolate and nude punctures, intermingled with others smaller and deeper which bear the setæ.....2
- Elytra deeply punctured throughout, all the punctures bearing hairs or setæ.....11
- 2—Body stout and convex, the elytra confusedly rugulose; maxillary palpi very stout; anterior tibiæ acute and feebly everted externally at tip; apical angles of the prothorax right and somewhat prominent, the apex prolonged and broadly rounded over the head; base not distinctly margined.....3
- Body narrowly elongate-oval and more depressed, the surface less rugose but with the elytral series more distinct; maxillary palpi variable but generally less stout; antennal club smaller, with the two basal joints wider than long; apical angles of the prothorax obtuse, the apex broadly, evenly rounded over the basal parts of the head, the base finely margined; scutellum transversely oval.....8
- 3—Elytral bristles moderate in length, more or less distinctly serial in arrangement, the antennal club long and loose, with the two basal joints as long as wide; head and pronotum finely, evenly punctured, the elytral punctures fine, not very distinct and rather sparse; male sexual characters very feeble.....4
- Elytral bristles extremely short, distributed uniformly but without order; antennal club shorter, with the two basal joints wider than long; male characters pronounced.....7
- 4—Third and fourth joints of the antennæ elongate and equal, each as long as the fifth and sixth together. Body stout, shining, castaneous in color, the head moderate, with the clypeal margin feebly reflexed and broadly subtruncate; eyes rather well developed; prothorax distinctly wider than long, the sides reflexed, feebly convergent and feebly, evenly arcuate from the obtuse basal angles to the apex; elytra one-half longer than wide, twice as long as the prothorax and just visibly wider. Length 2.4–2.8 mm.; width 1.05–1.25 mm. North Carolina (Asheville) **carolinæ**, sp. nov.
- Third joint much longer than the fourth, the latter distinctly shorter than the fifth and sixth combined.....5
- 5—Concave side margin of the pronotum not at all inwardly prolonged at base; body large, generally pale in color, shining; prothorax more than one-half wider than long, the basal angles very obtuse and rounded; sides slightly convergent and very feebly, evenly arcuate throughout; elytra barely one half longer than wide, nearly two and one-half times as long as the prothorax and slightly wider, the humeral callus small but pronounced. Length 2.8–3.0 mm.; width 1.1–1.3 mm. Montana (Missoula) **pallens**, sp. nov.
- Concave margin more or less distinctly prolonged inwardly at base; color black or piceous-black, the size smaller.....6
- 6—Male with the prothorax simple throughout. Atlantic regions, from Massachusetts to Iowa and Texas (Houston) **fusclipes** *Mell.*
- Male with the prothorax broadly impressed at apex. Body moderately stout, strongly convex, blackish in color and shining, the elytral punctures generally stronger

than those of the pronotum, with the impressed lines distinct; head with the clypeal margin moderately reflexed and broadly sinuato-truncate in both sexes; prothorax two-fifths wider than long, the sides feebly convergent, rather more rounded near the base; elytra one-half longer than wide, fully twice as long as the prothorax and just visibly wider posteriorly. Length 1.8-2.75 mm.; width 0.8-1.2 mm. Pacific coast—Vancouver Island, Washington State (Tacoma) and California (Humboldt Co. and Alameda)..... **impressa**, sp. nov.

- 7—Body rather stout, strongly convex, oblong-suboval, shining, blackish in color throughout, the legs and antennæ dark rufous; vestiture very short and almost scale-like, erect as usual; head moderate, the eyes well developed, convex and prominent; prothorax one half to three-fifths wider than long, the sides rather widely reflexed, slightly convergent and broadly, evenly arcuate throughout, the basal angles very obtuse; surface finely, closely punctured but polished; elytra more than one-half longer than wide, nearly two and one-half times as long as the prothorax and very slightly wider, the humeral callus small; surface confusedly rugulose, finely punctate and with slightly evident longitudinal lines and short transverse rugæ. *Male*.—Head concave, the clypeal margin reflexed and broadly bidentate; prothorax impressed transversely at the apical margin, the latter moderately reflexed, with a small rounded sinuation at the middle. *Female*.—Head flat, the clypeal margin very slightly reflexed, broadly, feebly sinuato-truncate, the prothorax rounded and unmodified at apex. Length 2.2-2.5 mm.; width 0.9-1.1 mm. Rhode Island (Boston Neck)..... **pistoria**, sp. nov.

- 8—Anterior tibiæ finely everted and acute externally at apex.....9
Anterior tibiæ simple at apex10

- 9—Pronotum not impressed at the apical angles, the flanks deeper, the side margin feebly reflexed, more strongly about the basal angles. *Female*.—Body elongate-oval, moderately convex, piceous, the elytra black; legs and antennæ paler, rufous, shining, the bristles short and pale, moderately abundant, not arranged in definite series on the elytra though with feeble suggestion of such arrangement at certain parts; head moderate, the eyes small, the clypeal margin broadly arcuate; prothorax nearly as long as wide, circularly arcuate in apical third, the sides thence nearly straight and parallel to the basal angles, which are very obtuse; base arcuate; punctures rather fine, strong and close-set; elytra three-fourths longer than wide, two and one-third times as long as the prothorax and scarcely wider; punctures fine, strong, close-set, the impressed lines distinct and with rather coarser irregular punctuation. Length 2.3 mm.; width 0.8 mm. Colorado (Salida)..... **striolata**, sp. nov.

- Pronotum impressed at the apical angles, the side margins strongly, narrowly and equally reflexed throughout. *Female*.—Nearly similar to *striolata* but shorter, the prothorax fully one-third wider than long, with the sides subparallel, evenly and feebly arcuate throughout, the apex broadly, evenly arcuate; punctures fine, strong and rather close-set; elytra two-thirds longer than wide, two and one-half times as long as the prothorax, the surface polished, with distinctly impressed lines of much coarser punctures, which are shallow, nude and variolate as usual, the bristles arranged more definitely in series. *Male*.—Smaller than the female and more slender, the clypeal margin rather strongly rounded near the eyes and remotely and feebly bituberculate at the middle; prothorax only slightly shorter

than wide, the sides feebly convergent and evenly and feebly arcuate from the base, the apex circularly rounded, the surface dull; elytra polished, nearly as in the female; first ventral segment foveate at the centre. Length 2.0–2.2 mm.; width 0.65–0.75 mm. Utah (southwestern).....**fraterna**, sp. nov.

- 10—Body more slender, piceous black throughout. *Female*.—Narrowly elongate-oval, moderately convex, shining; legs and antennæ rufous; bristles short, pale as usual, arranged in almost regular series on the elytra; front feebly convex; eyes moderate in size; clypeus broadly arcuate, very short before the eyes; prothorax nearly one-third wider than long, the sides feebly convergent, evenly and feebly arcuate from base to the rather pronounced apical angles, which are not rounded, the apex circularly arcuate, the punctures fine but deep, moderately close; elytra two-thirds longer than wide, nearly two and one-half times as long as the prothorax and somewhat wider, the humeral callus minute; series well impressed, almost regular but not much more coarsely punctate, the intervals sparsely punctulate. Length 1.9 mm; width 0.7 mm. California (Lake Tahoe)
macilenta, sp. nov.

Body stouter and more cylindric, bicolored, the head and prothorax rufous, the elytra black. *Female*.—Oblong-subcylindric, moderately convex, slightly dull in lustre; bristles short, feebly subserial on the elytra; head feebly convex, the clypeus broadly arcuate-truncate, oblique at the sides to the eyes, which are small; prothorax fully one-third wider than long, nearly as in *macilenta*, the basal angles more broadly rounded; elytra scarcely more than one-half longer than wide, but little more than twice as long as the prothorax and not wider, the impressed lines feeble and somewhat irregular, more coarsely punctured. Length 1.4–1.8 mm.; width 0.55–0.75 mm. California (Calaveras, Humboldt, Lake and Los Angeles Cos.).....**versicolor**, sp. nov.

11—Vestiture of the elytra stiff and bristle-like 12

Vestiture of the elytra long, slender and hair-like but erect and conspicuous; elytral punctures arranged without order, not at all seriate at any point; last joint of the maxillary palpi acutely pointed..... 25

12—Vestiture more or less distinctly serial in arrangement 13

Vestiture not at all serial at any point, the punctures evenly distributed..... 15

13—Body strongly cylindro-convex, the elytral punctures differing among themselves in size, the larger forming more or less indefinite series; bristles unusually long 14

Body narrow, parallel, distinctly depressed, the punctuation dense, the elytral punctures more uniform in size, the bristles moderate in length, forming close and nearly even series. Pennsylvania to Texas**creberrima** Mell.

14—Sides of the prothorax becoming straight and parallel behind the middle. *Male*.—Body subcylindric, somewhat shining, castaneous in color, the bristles coarse, erect, longer than the width of the scutellum, subserial on the elytra; head moderate, the front flat, the eyes small; clypeal margin feebly reflexed, remotely and feebly bituberculate, a small sinus just without each tubercle and thence strongly oblique for some distance to the eyes; prothorax nearly as long as wide, circularly rounded at apex, narrowly subsinuate at the middle; angles obtuse; base finely margined; surface very obsoletely, transversely impressed at apex; punctures uneven in size, small, deep, not very close-set; scutellum pointed behind;

elytra two-thirds longer than wide, equal in width to the prothorax and barely twice as long, obtuse at apex; series of coarse punctures scarcely impressed.

Female.—Nearly similar to the male, the clypeal margin evenly arcuato-truncate, the prothorax not modified. Length 2.4–2.9 mm.; width 0.9–1.1 mm. Utah (southwestern)..... **mormonica**, sp. nov.

Sides of the prothorax subparallel and evenly arcuate throughout. *Male*.—Similar to *mormonica* in the modifications of the clypeus and prothorax, pale piceous, polished, the bristles long, stiff and erect, subserial on the elytra; eyes small; prothorax fully one-third wider than long, the angles obtuse; punctures moderately fine, deep, somewhat uneven in size, rather close-set; elytra less than twice as long as wide, as wide as the prothorax and barely twice as long; punctures rather coarse and close-set, the larger only partially forming indefinite and scarcely at all impressed series. Length 2.0 mm; width 0.85 mm. Pennsylvania (Westmoreland Co.)..... **horridula**, sp. nov.

15—Body obese and strongly convex, suboval; male sexual characters pronounced, the female also having the apex of the prothorax at least feebly bilobed; apical angles of the anterior tibiæ everted and acute externally..... 16

Body subcylindric, convex; male sexual characters feeble, the clypeus finely bituberculate; maxillary palpi slender; prothorax margined at base, the angles obtuse..... 21

16—Clypeus angulate at each side near the eyes in both sexes..... 17

Clypeus emarginate in the middle and bidentate, not angulate near the eyes..... 20

17—Elytra very nearly one-half longer than wide..... 18

Elytra very short, scarcely one-third longer than wide..... 19

18—Elytral punctures rather close-set. *Male* with the clypeal margin reflexed and quadridentate, the apex of the prothorax with two broad porrect triangular processes, separated by a rounded situation. California..... **vitula Mann**.

Elytral punctures rather sparse, the integuments more shining. *Female*.—Body elongate-oval, very convex, polished, castaneous, the legs, antennæ and sometimes the anterior parts paler; bristles of the prothorax very small and rather fine, not conspicuous, of the elytra coarse, moderately long and rather sparse; head concave apically, the clypeus broadly rounded and obscurely quadrangulate; eyes rather small; prothorax one-fourth wider than long, the sides feebly convergent and very feebly, evenly arcuate from base to the rather obtuse but somewhat prominent apical angles; base transverse, very feebly lobed at the middle, very finely margined; apex advanced, rounded and feebly bilobed; punctures fine and moderately close; scutellum obtuse, wider than long; elytra as wide as the prothorax and slightly less than twice as long, perfectly even, the punctures deep, very much larger than those of the pronotum. Length 2.3–2.5 mm.; width 1.15 mm. California (Humboldt Co.)..... **illustris**, sp. nov.

19—*Female*.—Body stout, oval, strongly convex, pale in color, polished, the elytral bristles very short, those of the prothorax rather inconspicuous; head nearly as in *illustris*, less concave anteriorly, the eyes very small; prothorax nearly as in *illustris* but shorter, nearly one-half wider than long, the punctures very small and rather sparse; surface occasionally with a very obsolete median canaliculation near the apex; elytra very short, scarcely two-thirds longer than the prothorax, strongly convex, obtusely rounded behind, the punctures rather

coarse but feebly impressed and quite sparse. Length 2.1 mm.; width 1.0 mm.

Louisiana **congesta**, sp. nov.

- 20—*Male*.—Cylindric-oval, not very stout, strongly convex, pale in color probably from immaturity, rufo-testaceous, shining; bristles very stout but short, distinct and rather close on the prothorax, somewhat sparse on the elytra; head and eyes rather well developed, the front flat; clypeus strongly reflexed, triangularly bidentate; prothorax two-fifths wider than long, the sides rather strongly convergent and arcuate from base to apex, the latter reflexed and triangularly bidentate; base truncate; punctures quite coarse, deep and close-set; elytra less than one-half longer than wide, four-fifths longer than the prothorax, the punctures about equal in size to those of the pronotum but sparser. Length 1.4 mm.; width 0.6 mm. California.....**duplex**, sp. nov.

- 21—Prosternum normally convex; anterior tibiae externally everted and acute at apex; scutellum small, not wider than long; prothorax rounded at the apex; male with the first ventral simple. *Male*.—Body narrowly cylindric-oval, moderately convex, piceous-black, with the legs and antennae pale; surface shining; bristles coarse, pale, erect, moderately sparse, even in length on the elytra; head and eyes small; clypeal margin feebly reflexed, bituberculate; prothorax nearly as long as wide, parabolically rounded anteriorly, with a small and very feeble median sinuation, the sides becoming straight and parallel toward base; punctures fine but perforate, rather close-set; elytra rather more than one-half longer than wide, as wide as the prothorax and twice as long, the punctures rather coarse, well separated and subeven in size. Length 2.0 mm.; width 0.7 mm. California (Lake Tahoe).....**hystriacula**, sp. nov.

Prosternum broadly and feebly biconcave; anterior tibiae thickened and rounded externally at apex; scutellum larger; prothorax feebly sinuate from above at the converging sides of the apex; maxillary palpi with the last joint more acutely pointed; male with the first ventral foveate at the middle.....22

- 22—Eyes small, the body more elongate and cylindric.....23

Eyes large and well developed; body stouter and more cylindric-oval.....24

- 23—Antennal funicle longer than the club. *Male*.—Moderately convex and shining, rather pale castaneous, the bristles stiff, moderately long and rather abundant; head rather well developed, the clypeal tubercles small and separated by a fourth of the entire width; prothorax nearly a fourth wider than long, rounded and somewhat lobed at apex, the sides becoming nearly straight and parallel toward base; punctures rather strong and close set though not very coarse; elytra one-half longer than wide, as wide as the prothorax and rather more than twice as long, the punctures quite coarse, impressed and somewhat close-set. Length 1.75–1.8 mm.; width 0.75 mm. Montana (Missoula)....**montana**, sp. nov.

Antennal funicle equal in length to the club. *Male*.—Dark rufo-piceous, the elytra black, the legs and antennae pale, shining, the bristles stiff, erect and pale but rather sparse throughout; head well developed, the minute tubercles of the clypeus separated by a little more than a fourth of the width; prothorax nearly as in *montana* but nearly a third wider than long, with the punctures much less close-set; elytra one-half longer than wide, as wide as the prothorax and rather more than twice as long, the punctures moderately coarse, deep and

not very close-set. Length 1.5-1.7 mm.; width 0.65-.75 mm. Vancouver Island, Washington State and Northern California.....**soror**, sp. nov.

- 24—*Male*.—Black and shining, the anterior parts picescent; legs and antennæ pale; bristles rather sparse, short and somewhat inconspicuous anteriorly, longer on the elytra; head well developed, the minute clypeal tubercles separated by a fifth of the width; prothorax nearly as in *soror* but fully two-fifths wider than long, the punctures strong and well separated; elytra suboval, not more than two-fifths longer than wide, rather wider than the prothorax and distinctly more than twice as long; punctures only moderately coarse but deep and quite sparse. Length 1.6-1.75 mm.; width 0.75 mm. New York.

curtula, sp. nov.

- 25—Anterior tibiæ everted and acute externally at apex; hairs very long, a fifth or sixth as long as the entire width of the elytra. *Male*.—Body stout, cylindric, polished, piceous in color, the vestiture very long and bristling, abundant; head and eyes moderately developed; front feebly concave; clypeus with two long slender erect and widely separated processes; prothorax slightly wider than long, the sides just visibly convergent and nearly straight from base nearly to the apex, then rounding and strongly convergent to a trapezoidal and obliquely upturned lamina, which is subtriangularly emarginate at tip; surface with rather strong and close-set punctures, feebly impressed at apex behind the lamina; elytra short, cylindric, obtuse at apex, two-fifths longer than wide, as wide as the prothorax and three-fifths longer, the punctures rather coarse, even, moderately close-set, the surface not at all rugose. *Female*.—Smaller than the male, the clypeus feebly reflexed at each side; prothorax shorter and more transverse, simple. Length 1.75-2.1 mm.; width 0.75-0.9 mm. Florida (Lake Worth).....**hirsuta**, sp. nov.

Anterior tibiæ simple at apex, not dilated or produced; hairs shorter, about an eighth as long as the entire width of the elytra. *Female*.—Oblong-oval, moderately convex, shining, pale rufo-testaceous, the vestiture only moderately abundant and not dense; head moderate, the eyes small; clypeal margin feebly reflexed at each side; prothorax nearly one-half wider than long, parabolically rounded at apex, the sides becoming parallel and nearly straight behind the middle; punctures fine and rather sparse, elytra suboval, rather ogival at tip, two-fifths longer than wide, rather wider than the prothorax and more than twice as long, the punctures somewhat coarse but feeble, well separated; humeral callus rather small and feeble. Length 1.4 mm.; width 0.65 mm. Alabama.

ursulina, sp. nov.

Fuscipes is our most abundant species, and the west coast *impressa* resembles it very much in external appearance. Mellié states that the anterior margin of the head in the male of *fuscipes* is surmounted by two very small tubercles; this is not the case in the representatives before me, but as Mellié included with his American specimens some from Madeira, it is probable that he had one of these under observation, and that it is a species different from *fuscipes*. *Vitula* of Mannerheim, is assigned to *Ennearthron* in the Henshaw list, but without

reason, as it is in no way related to that genus, and the *Cis dichrous*, of that list, is a manuscript name, appearing only in the LeConte list of Coleoptera. *Hirsuta* and *ursulina* are remarkable in having long fine and bristling pubescence. *Hystricula* seems to have the elytral bristles vaguely inclined to serial arrangement, and it is undoubtedly more closely allied to *mormonica* than to the three species immediately following it in the table. The Alaskan *Cis ephippiatus*, of Mannerheim, (Bull. Mosc., 1853, p. 234), is omitted from our lists. It is unknown to me, but seems to be peculiar in having the elytra profoundly and remotely, subseriatly punctate, red, with a large common transverse black spot at the middle, which attains the margin at each side.

Orthocis, gen. nov.

This genus is very closely allied to *Cis*, but differs in the more parallel form of the body, in its glabrous surface, margined elytral suture and absolutely simple apex of the anterior tibiae. The maxillary palpi are rather stout, the ligula large and corneous, the antennae long, with the two basal joints of the funicle elongate and the club rather small and loose. The head and clypeus are absolutely simple in the male, and the only visible male sexual character is a small oval opaque and densely pubescent area at the centre of the first ventral segment, at the point occupied by a deep circular fovea in some species of *Cis*. Our two species greatly resemble each other but may be distinguished as follows:—

Ligula broader and flat; third antennal joint nearly or quite as long as the next two combined; body rather less elongate, the sides of the prothorax somewhat less rectilinear, otherwise similar to the following. New York . . . **punctata** Mell.

Ligula narrow and convex; third antennal joint distinctly shorter than the next two combined. *Male*.—Oblong, parallel, moderately convex, polished, black, the legs and antennae rufous, glabrous, each puncture of the elytra with a very minute simple silvery hair; head well developed, convex, the eyes small and prominent; clypeal margin perfectly simple, evenly arcuate from side to side; prothorax two-fifths wider than long, the sides parallel and straight, rather widely reflexed; apex broadly arcuate and slightly advanced; angles obtuse; base finely margined; punctures rather fine but deep, well separated; elytra two-thirds longer than wide, rather wider than the prothorax and nearly two and one-half times as long, obtusely ogival at apex, the sides very feebly arcuate; punctures confusedly arranged, rather small but deep and somewhat sparse, the surface smooth; elytral suture margined toward tip. Length 2.3–2.5 mm.; width 0.85 mm. California (Alameda Co.) **aterrima**, sp. nov.

Xestocis, gen. nov.

A few species of peculiar facies are separated under this name, because of the prosternal carination. The antennæ are of the normal structure, with the club well developed and the second funicular joint only slightly longer than wide. The anterior tibiæ are strongly oblique and acute externally at apex, except in *opalescens*, where the external angle is slightly thickened and rounded. The maxillary palpi are usually rather slender. The first ventral segment is subfoveate and densely pubescent at the centre of the disk in the males. Our five species are strongly differentiated among themselves, and may be described as follows:—

- Boby glabrous. 2
 Body clothed with short pubescence or bristles. 3
 2—Clypeus bidentate in the male, the prothorax simple and rounded at apex in both sexes. *Male*.—Suboval, very dark rufo-piceous, sometimes paler, polished; head and eyes moderately developed; prothorax two-fifths wider than long, the sides just visibly convergent from base to the obtuse apical angles, rather distinctly and evenly arcuate; lateral margin very fine, the base finely margined, more distinctly in the middle; punctures minute and rather sparse; elytra less than one-half longer than wide, twice as long as the prothorax and barely wider, rather narrowly rounded at apex, very feebly subrugulose, minutely, sparsely punctate. Length 1.5–1.9 mm.; width 0.7–0.85 mm. Canada (Toronto), New Jersey, Pennsylvania, Indiana and Iowa. **levettei**, sp. nov.
 Clypeus monocrate in the male, the prothorax with two long slender porrect processes. *Male*.—Oblong-oval, convex, testaceous, polished, glabrous, each puncture with an excessively minute hair; head and eyes moderately developed, the front impunctate, broadly concave, the clypeus reflexed, with a long erect parallel process at the middle, feebly expanding toward apex, the latter very feebly emarginate; prothorax distinctly wider than long, the sides moderately convergent and evenly arcuate throughout, the apex prolonged over the head and with two long remote straight and porrect processes, the surface behind their separating sinus broadly impressed; punctures fine, not very sparse; elytra short, one-third longer than wide, twice as long as the prothorax at the median line and somewhat wider, rather rapidly and narrowly rounded at apex, the sides arcuate; surface nearly smooth, minutely, rather sparsely punctate. *Female*.—Nearly similar to the male, the clypeus broadly sinuate at the middle, the prothorax broadly rounded at apex. Length 1.2–1.35 mm.; width 0.55–0.6 mm. Pennsylvania (Westmoreland Co.) and Rhode Island (Boston Neck). **miles**, sp. nov.
 3—Upper surface normal; vestiture distinct, even but arranged without order; punctures of the elytra intermingled with larger sparse punctures, which are sometimes disposed in vague series; clypeus bidentate in the male. 4
 Upper surface covered with a waterproof crust, through which the extremely minute simple hairs protrude. 5
 4—Vestiture composed of small simple and subdecumbent hairs. *Male*.—Oblong-oval, moderately convex, rufo testaceous, feebly shining; prothorax wider than

long, minutely but strongly, closely punctate; elytra two-fifths longer than wide, ogivally rounded at apex, finely, rather closely punctured and vaguely subrugose. Alaska (Sitka) and Queen Charlotte Islands (Massett). **biarmata** Mann.

Vestiture composed of coarse stiff and suberect squamules. *Male*.—Slightly smaller than *biarmata* but similar, oblong-oval, moderately convex, testaceous, feebly shining, the bristles short and abundant; head rather small, feebly concave, the eyes moderate; clypeus triangularly reflexed at each side; prothorax nearly one-half wider than long, the sides just visibly convergent, feebly and evenly arcuate; angles obtuse; apex subangularly produced and rounded, with the tip very narrowly sinuato-truncate; punctures moderately fine, deep and quite dense; elytra not quite one-half longer than wide; less than twice as long as the prothorax and somewhat wider, feebly rugulose, minutely and rather closely punctate, the punctures smaller than those of the prothorax; apex ogivally rounded. Length 1.6 mm.; width 0.7 mm. Pennsylvania (locality not recorded).

insolens, sp. nov.

5—*Male*.—oblong oval, rather stout, only moderately convex, polished, dark piceo-testaceous; head moderate, the eyes small but prominent; front broadly concave, the clypeus acutely, bitriangularly reflexed; prothorax one-half wider than long, the sides very feebly convergent, rather strongly, evenly arcuate; apex subtriangularly prolonged, with the tip minutely emarginate and feebly reflexed; punctures rather fine but distinct, slightly separated; lateral margins narrowly reflexed; elytra short, scarcely a third longer than wide, as wide as the prothorax and four-fifths longer, the apex rather acutely ogival; surface not very finely, evenly and rather closely punctate. Length 1.4–1.6 mm.; width 0.6–0.75 mm. Pennsylvania (Westmoreland Co.) **opalescens**, sp. nov.

Biarmata is misprinted "*bicarinatus*" in the Henshaw list.

Brachycis, gen. nov.

The chief peculiarities of the single type of this genus are the short and suboval form, very short, transversely excavated prosternum and obsolescent side margin of the prothorax at the rounded and obtuse apical angles. The antennal club is strongly developed, as long as the preceding six joints combined and has the sensitive apical pores small but deep and bristling with white setæ, thus leading up to the remarkable *Plesiocis* which follows. The maxillary palpi are rather slender and acutely pointed, and the anterior tibiæ are finely, acutely and almost perpendicularly produced externally in a well-marked process. Sexual characters are wanting in the single specimen before me, which is probably a female:—

Broad, moderately convex, oblong-oval, piceous, the elytra, legs and antennal shaft paler rufo-testaceous; body clothed above with stiff pale and erect setæ, moderate in length and density, uniformly distributed; head rather small, the eyes moderate; clypeus simple, subtruncate; prothorax two-thirds wider than long;

angles rounded, the sides strongly convergent and broadly arcuate from base to apex, the latter broadly subparabolic, not extending much over the head; punctures not very coarse but deep, rather close-set; elytra oblong, very broadly, obtusely rounded at apex, one-fourth longer than wide, two and one-half times as long as the prothorax, and, at apical third or fourth, visibly wider; sides nearly straight; punctures rather coarse, deep and somewhat close set, the surface nearly smooth. Length 1.4 mm.; width 0.75 mm. New York (Ithaca)

brevicollis, sp. nov.

Plesiocis, gen. nov.

This genus, which is also represented at present by a single species, is remarkably distinct in the structure of the antennæ, which are 9-jointed, with the club large and well developed, more corneous than usual, dark in color and with the two sensitive subapical pores on each side large, rounded and filled with white spongy pubescence; the club is nearly as long as the entire basal portion, with its first two joints transverse and obtriangular. The maxillary palpi are well developed, but rather slender, the prosternum normal, the process however rather thin and sublamellar. The anterior tibiæ are strongly, obliquely produced and acute externally at apex. The male has very simple characters, the clypeus having two minute and rather approximate tubercles, but the first ventral segment has, as in so many other cases, a small pubescent fovea at the centre of the disk. The type resembles a large subcylindrical *Cis*:—

Body cylindric-oval, strongly convex, piceous-brown, shining, the legs and antennal shaft rufous; vestiture rather sparse, the hairs coarse, pale, stiff and erect, moderate in length; head rather small, the eyes moderate, convex; front flat, finely punctate; prothorax two-fifths wider than long, the sides feebly convergent and slightly arcuate, the basal angles rather broadly rounded, the apical obtusely subprominent; lateral margin narrowly reflexed; base finely margined; apex broadly rounded, slightly produced over the head; punctures coarse, perforate and close set; elytra one-third longer than wide, twice as long as the prothorax and scarcely at all wider, the sides nearly straight, the apex very broadly and obtusely rounded; punctures coarse, perforate, close-set and arranged evenly but without order, the interspaces smooth. Length 2.1–2.3 mm; width 1.0–1.1 mm. California (Mokelumne Hill, Calaveras Co.).....**cribrum**, sp. nov.

Ennearthron *Mellié*.

The small cylindrical species which compose this genus may be readily identified by the characters given in the table. The antennæ are slender, with the club rather feeble, the first joint of the funicle generally equal to the next two, which, with the last are equal and moniliform. Prosternum moderately developed before the coxæ, with

the process very narrow and sublamellar. The male characters are always pronounced and generally affect both the clypeus and thoracic apex, but these characters greatly diminish in degree in the smaller and less developed males, these depauperate individuals not differing much from the females in either the present genus or *Ceracis*. In both of these genera the male also has a small deep pubescent fovea, not at the centre, but near the posterior margin, of the first ventral segment. The characters of the following table are taken throughout from what appear to be fully developed males only:—

- Male with the clypeal margin broadly and strongly reflexed in a trapezoidal process, the thoracic process bidentate. 2
- Male with a long slender erect clypeal process, the thoracic apex simple and rounded; species very small. 11
- 2—Elytra without trace of impressed lines. 3
- Elytra with very feebly and unevenly impressed lines, the punctures feebly subserial in arrangement. 10
- 3—Male with the thoracic processes longer, narrower and more approximate; punctuation feeble, the elytral punctures always confused in arrangement. Atlantic and Gulf regions. 4
- Male with the thoracic processes shorter, more widely separated and more lamellarly triangular; punctuation stronger, the elytral punctures generally confused but occasionally very feebly subserial. Pacific Coast regions. 6
- 4—Apex of the pronotum rather feebly impressed behind the processes. 5
- Apex of the pronotum strongly, transversely impressed behind the processes. Moderately slender, polished, piceo-rufous in color; head well developed, concave, the clypeal process large and well developed, with the apex feebly sinuate at the middle; prothorax slightly wider than long, the sides parallel and nearly straight, the angles all rounded; processes long, slender and distinctly diverging as usual; base and sides finely margined; punctures fine and sparse; elytra less than one-half longer than wide, as wide as the prothorax and two-thirds longer, the surface very feebly subrugulose, sparsely and very minutely punctate, the punctures much more minute than those of the pronotum; apex evenly rounded. Length 1.2–1.5 mm.; width 0.45–0.6 mm. Texas (Columbus) and Louisiana.
- piceum**, sp. nov.
- 5—Elytra fully one-half longer than the prothorax, slender, cylindric-oval, black, rather strongly shining; legs, mouth parts and antennæ pale; punctures fine and rather sparse; thoracic processes rather short. Canada to Pennsylvania (*mell.* i Mell., *unicolor* Csy.) **thoracicornæ** Zieg.
- Elytra very short and quite strongly cuneiform, very much less than one-half longer than the prothorax. Rather stout, the head polished and concave, the eyes small; clypeal process well developed but with the sinuate sides rather rapidly converging, the apex a little less than half as wide as the head, feebly sinuato-truncate; prothorax large, not quite as long as wide, the sides parallel and broadly arcuate, the corneous processes moderately long and rather stout; punctures fine but distinct, only moderately sparse; elytra at base as wide as the

prothorax, the sides nearly straight and distinctly convergent, the apex narrowly rounded; punctures rather sparse and very minute, the surface feebly rugulose. Length 1.3 mm.; width 0.53 mm. Louisiana (Morgan City).

laminifrons, sp. nov.

6—Thoracic process of the male abruptly formed. 7

Thoracic process gradually formed, its sides merging gradually and obliquely into the sides of the prothorax; thoracic punctures quite dense. 9

7—Elytral punctures rather coarse and closer; thoracic process one-half as wide as the elytra. Body rather stout, blackish, the elytra piceous; legs and oral organs pale; lustre moderately shining; head and eyes moderately developed; clypeal process very broad, only moderate in length, almost transversely truncate; prothorax only slightly wider than long, the sides parallel and broadly arcuate; apical process very broad, deeply sinuate; punctures strong and close-set; elytra quite distinctly narrower than the prothorax and scarcely more than one-half longer; one-half longer than wide, the sides parallel; apex broadly rounded; surface feebly rugulose, strongly punctured, less closely than the prothorax. Length 1.4–1.7 mm.; width 0.55–0.7 mm. California (southern). **grossulum**, sp. nov.

Elytral punctures fine but distinct, rather sparse, the thoracic process much less than one-half as wide as the elytra. 8

Thoracic punctures close-set; angles of the clypeal process subcarly at all rounded.

Blackish, the elytral punctures generally very feebly subserial in arrangement. California (especially northern coast regions) **californicum** Csy.

Thoracic punctures sparse; angles of the clypeal process rounded. Body evenly cylindric, moderately shining, more or less rufo-testaceous in color, the elytra sometimes blackish toward base; head and eyes moderate, the clypeal process moderately strong, with the sides rather strongly convergent and the apex broadly sinuate; prothorax slightly transverse, the sides parallel and almost straight, rounding anteriorly, the process rather feebly developed, sinuate at apex; elytra scarcely one-half longer than wide, as wide as the prothorax and three-fifths longer, the sides parallel and straight, the apex broadly rounded; punctures fine and sparse, the surface almost smooth. Length 1.2 mm.; width 0.5 mm. California (Sonoma Co.). **discolor**, sp. nov.

9—Narrowly cylindric, blackish, the elytra rufescent at tip; legs, trophi and antennæ pale; surface moderately shining; head well developed, the clypeus moderate in length, with the sides strongly convergent, the apex broadly sinuato-truncate and the angles blunt; prothorax but little wider than long, the sides subparallel and very slightly arcuate; process rather short, sinuate at tip; elytra fully one-half longer than wide, as wide as the prothorax and fully three-fourths longer, somewhat parabolically rounded at tip, the punctures fine but strong, but little smaller than those of the prothorax and much less close-set. Length 1.1–1.3 mm.; width 0.4–0.5 mm. California (Los Angeles). **convergens**, sp. nov.

10—Moderately stout, piceous to blackish in color, with the elytra paler; legs, trophi and antennæ pale, the club dusky; surface polished; head well developed, broadly concave, the clypeus only moderately reflexed, the apex broadly truncate; prothorax but little wider than long, the sides subparallel and broadly, distinctly arcuate; process rather short, lamelliform, with a triangular incisure at the middle, the process abruptly formed; punctures very fine and sparse; elytra short,

less than one half longer than wide, scarcely as wide as the prothorax and one-half longer, evenly rounded at apex, the punctures minute and sparse, those of the series larger and closer. Length 1.0-1.2 mm; width 0.4-0.5 mm. Florida.

pullulum, sp. nov.

- 11—Narrowly cylindric-oval, moderately shining, pale flavo-testaceous throughout; head and eyes well developed, the front concave; clypeal process narrow, long, the apex strongly rounded; prothorax distinctly wider than long, the apex evenly and circularly rounded, the sides becoming parallel toward base; punctures very minute, sparse and feeble; base distinctly margined as usual; elytra fully as wide as the prothorax and two-thirds longer, not quite one-half longer than wide, parabolically rounded at tip, margined at base, the punctures sparse, very feeble and extremely minute, even smaller than those of the prothorax; surface smooth. Length 1.0-1.1 mm.; width 0.4-0.45 mm. Florida. **unicorne**, sp. nov.

Unicorne is evidently closely related to the Brazilian *corniferum* of Mellié, but in that species the cephalic process is said to be broad, recurved and narrowed to the acute apex.

Ceracis Mellié.

This genus is scarcely distinct from *Ennearthron*, agreeing in facies and in every structural feature except the antennæ, which are 8-jointed, one of the small joints of the funicle being eliminated. The two species before me are as follows:—

- Rufo-testaceous, the elytra blackish toward base; punctures very minute and sparse, the remaining characters nearly as in *punctulata*. Louisiana [Mellié], North Carolina and Pennsylvania (Westmoreland Co.) **sallei** Mell.
 Black throughout, the head and prothorax sometimes picescent; legs, trophi and antennæ pale; surface polished, the elytra nearly smooth; head and eyes well developed; clypeal process rather well developed, with its sides but slightly converging, the apex broadly sinuato-truncate; prothorax slightly shorter than wide, the sides feebly convergent and broadly arcuate from the base to the rather pronounced but obtuse apical angles; process very abruptly formed, moderate in length, the exterior angles somewhat everted and the apex deeply sinuate; punctuation quite deep and close-set but rather fine; base finely margined; elytra at base as wide as the prothorax, less than one-half longer than wide; the sides nearly straight and feebly convergent; apex broadly rounded, base not in the least margined; punctures finer and sparser than those of the prothorax, confusedly arranged. Length 1.25-1.3 mm.; width 0.55-0.6 mm. Florida.
punctulata, sp. nov.

The species recently described from Lower California by Dr. Horn, under the name *similis*, appears to resemble *sallei*, but differs from both the above in having the elytral punctures coarser than those of the prothorax, a very exceptional character in *Ennearthron* and *Ceracis*.

Octotemnus Mellié.

This is a very pronounced and distinct genus, differing from *Ennearthron* in the oval outline of the body, absence of male sexual characters of the head and prothorax, and in tibial structure. The maxillary palpi are slender and pointed, the antennal club well developed and very loose, the joints being attached by very slender pedicels and with the sensitive pores approximate at each side of the apex. The prosternum is short and somewhat concave before the coxæ, with the process thin and laminate. There is no fovea on the first ventral segment of the male, but the surface is feebly and approximately bi-impressed near the base, the intervening area elevated and prolonged backward in an isolated triangular point, a structure not suggested elsewhere in the family. The surface is glabrous, but the elytra have a few widely dispersed erect setæ. Our two species are very closely allied; they may be described as follows from the male:—

Form more narrowly oval; size larger, the basal abdominal process of the male very acute at apex, pale testaceous, polished throughout; head and eyes well developed, the latter convex; front broadly, evenly convex, very minutely, sparsely punctate; clypeal margin slightly thickened for a short distance from the eyes; prothorax but little wider than long, circularly rounded at apex, the sides diverging slightly to the base; angles all very broadly rounded; base very minutely margined; punctures very minute, feeble and sparse; elytra fully one-half longer than wide, a little wider than the prothorax and nearly twice as long; sides feebly arcuate, the apex rather narrowly parabolic; base not margined; humeral callus very small, feeble; surface feebly rugulose, the punctures extremely minute and sparse. Length 1.4–1.75 mm.; width 0.55–0.75 mm. Pacific coast (from Vancouver to San Francisco).....**denudatus**, sp. nov.

Form rather shorter and more broadly oval, polished, the pronotum more or less alutaceous, blackish to pale flavo-testaceous throughout; head and prothorax nearly as in *denudatus*, the elytra barely one-half longer than wide, distinctly wider than the prothorax and barely twice as long, the surface nearly smooth, very minutely, sparsely punctate. Length 1.35–1.6 mm.; width 0.6–0.65 mm. Rhode Island, New York and Pennsylvania.....**lævis**, sp. nov.

Both of these species are very common, and it is remarkable that they have not been heretofore described. Perhaps the *Cis pumicatus* of Mellié may be the same as *lævis*, but that species, taken apparently near New Orleans, is said to have the prothorax longer than wide and the elytra only one-half longer than the prothorax, which language agrees rigorously also with the figure and in no way suits either of the above species.

SPHINDIDÆ.

This family forms a very good transition to the Cryptophagidæ. The antennæ are of a more perfectly clavicorn type than in Cioidæ, and have a large compact club, with the ninth joint variable in size. The mentum is very large, in striking contrast to the Cioidæ, where it is unusually minute. The maxillary palpi are small, slender and pointed and the anterior coxæ rather widely separated. The clypeus is convex, continuous with the front, narrowed and continued over the larger part of the mandibles, the labrum being small, almost atrophied in *Odontosphindus*, the epistomal suture fine and posteriorly arcuate. The eyes are large, convex and coarsely faceted. The two genera before me may be distinguished as follows:—

Tarsi heteromerous; antennæ 11-jointed, the ninth joint wider than the eighth, but very short, the club virtually 2 jointed, large and nearly cylindric; prothorax denticulate at the sides, the elytra with impressed series of coarse punctures; body glabrous ***Odontosphindus***

Tarsi pentamerous; antennæ 10-jointed, the club variable, 2 or 3-jointed; prothorax not denticulate, the elytra with unimpressed series of fine punctures; body sparsely pubescent. ***Sphindus***

Another genus, *Eurysphindus*, has been described by LeConte, but I have seen no example; the inferior flanks of the prothorax are said to be deeply concave and the body clothed with erect hair.

***Odontosphindus* Lec.**

These species are much larger than those of *Sphindus* and are distinguishable at once by the characters of the table; the two species are as follows:—

Sides of the prothorax scarcely at all reflexed, finely margined. Atlantic regions.

***denticollis* Lec.**

Sides of the prothorax distinctly though not very broadly explanato-reflexed, more strongly and quite irregularly denticulate. Body subparallel, moderately convex, pale rufo-testaceous in color, shining though somewhat alutaceous in lustre; head moderate in size, the epistoma polished and impunctate; eyes moderately large, convex; antennæ as long as the width of the head, the first joint large, the second more slender, contorted at base as usual; prothorax quite transverse, parallel, the sides feebly arcuate; punctures rather coarse and close set; elytra only just visibly wider than the prothorax, three-fourths longer than wide, the serial punctures obsolete toward tip. Length 3.0–3.5 mm.; width 1.25 mm. California (Sonoma Co.) ***clavicornis*, sp. nov.**

Clavicornis is materially larger than *denticollis*, and has a larger, more transverse and more coarsely punctured prothorax.

Sphindus *Chev.*

The species of this genus are small and oblong, with duller surface lustre and moderately long, rather sparse pubescence, serial in arrangement on the elytra. The three species before me may be thus separated:—

Antennal club 2 jointed.....2

Antennal club purely 3-jointed.....3

2—Pronotum minutely and rather closely punctured, more or less rufo-piceous in color. Atlantic regions to Iowa**americanus** *Lec.*

Pronotum more coarsely and quite sparsely punctured. Body black, stouter, dull in lustre; head and eyes moderate in size, the epistoma polished; antennæ a little longer than the width of the head, the club only moderately stout, the tenth joint twice as long as the ninth; prothorax nearly twice as wide as long, the sides just visibly convergent from base to apex, feebly arcuate; apex broadly arcuate; elytra scarcely a fourth longer than wide, barely wider than the prothorax and two and one-half times as long; serial punctures rather fine, the intervals dull and minutely shagreened. Length 1.9 mm.; width 0.9 mm. Colorado (Buena Vista—8000 feet).....**crassulus**, *sp. nov.*

3—Narrowly oblong, more shining, piceous black, the elytra, legs and antennæ pale testaceous; head moderate, the eyes large and convex, separated by about three times their own width; antennæ moderate in length, the last three joints forming a compact subcylindric club; prothorax much smaller than in the two preceding species, transverse, the sides subparallel; surface evenly convex, very minutely and not very closely punctulate; elytra two-fifths longer than wide, about a fifth wider than the prothorax and three times as long; serial punctures feeble but distinct, the intervals smooth and alutaceous; apex obtusely rounded as usual. Length 1.7 mm.; width 0.7 mm. Canada (Toronto).

trinifer, *sp. nov.*

Americanus varies greatly in size as usual in this and neighboring families; it is quite abundant and occurs in fungi of various species.